

# **EXHIBIT 2**

**IN THE UNITED STATES DISTRICT COURT  
FOR THE SOUTHERN DISTRICT OF OHIO  
EASTERN DIVISION**

**A.F.,**

**Plaintiff,**

**V.**

**ASSOCIATION OF AMERICAN  
MEDICAL COLLEGES,**

**Defendant.**

**Case No.: 2:23-cv-01241**

## **DECLARATION OF MARK S. GREENBERG, PH.D.**

I, Mark S. Greenberg, declare as follows:

1. Unless otherwise stated, this declaration is based on my personal knowledge.
2. I am an adult clinical neuropsychologist licensed as a health service provider by the Commonwealth of Massachusetts. I earned my M.A. and Ph.D. degrees in Clinical Psychology from the University of Pennsylvania, interned at the Veterans Administration Outpatient Clinic in Boston, and completed my Postdoctoral Training in Clinical Neuropsychology at the New England Deaconess Hospital.
3. I have had a faculty appointment at the Harvard Medical School since 1983. I have trained and supervised dozens of advanced neuropsychology post-doctoral fellows in the art and science of neuropsychology as part of the Harvard-Longwood Neuropsychology and Cambridge Hospital Psychiatry training programs. I previously served as the Director of Psychology at the New England Deaconess Hospital and Director of Psychological Assessment at the Medfield State Hospital. Since 1990, I have maintained an active outpatient clinical and neuropsychology

practice. I regularly serve as an independent outside consultant for national testing agencies (e.g., ETS and the Association of American Medical Colleges) and major universities (e.g., Harvard, Cornell and Princeton) and have performed well over a thousand document reviews in connection with requests for academic or testing accommodations. My current hospital affiliation is with the Massachusetts General Brigham healthcare system. I have a special professional interest in the syndrome of Attention-Deficit-Hyperactivity Disorder and have co-authored one of the first modern published papers to describe its presentation in adults.

4. A true copy of my curriculum vitae is attached as Exhibit A. As noted there, a sizable proportion of my clinical practice over the last decade-and-a-half has been dedicated to assisting college students and high-functioning professionals with underlying residual learning and attentional issues. This has included routinely advocating for appropriate accommodations when warranted.

5. In late April 2023, I was asked by the Association of American Medical Colleges (AAMC) to review a prospective MCAT examinee's request that she be reconsidered for 50% extended test time. I refer to the examinee here as "AF," consistent with how she is apparently being referred to in the lawsuit captioned above. I have attached as Exhibit B a true copy of the report that I provided to AAMC in response to this request, dated May 3, 2023.

6. I reviewed the following documents as part of my review:

- Duke Accommodations Letter (9/6/22)
- Duke Accommodations Letter (4/15/21)
- Letter from A.F.'s pediatrician, Dr. Kathleen Costlow
- Dr. Benninger Addendum to Psychological Report (4/13/23)
- Dr. Benninger Summary of Test Results (January 2023)
- Dr. Benninger Psychological Report (March 2023)
- Pamela Campbell letter (11/14/22)

- Pamela Campbell letter (12/23/22)
- A.F. Supplemental Statement (4/17/23)
- A.F. Cover Letter for Dr. Benninger's Report
- A.F. Personal Statement (4/14/23)
- A.F. ACT Scores
- A.F. High School Transcript
- A.F. Transcript Duke University
- Letter from A.F.'s Father
- Letter from A.F.'s Mother
- AAMC Accommodations Request Intake Responses

7. AF's case was presented to me for review as one in which two testing accommodations for the MCAT - Stop the Clock Breaks and Separate Room – had been already granted through the AAMC review process. The applicant, AF, was now requesting reconsideration for the denied request for 50% extended time. Accordingly, I oriented my analysis on whether the 50% extra-time accommodation requested by AF was warranted, based upon both the new and prior documentation that had been submitted.

8. The totality of the historical, educational and clinical information I reviewed painted a picture of a dedicated young woman who has been able to consistently achieve to a high level in multiple academic settings and on multiple standardized tests. AF reports being able to accomplish this by compensating for some lifelong traits and tendencies that render her prone to distraction and inefficient processing. She also reports that this successful compensation has come at the expense of exerting considerable effort and the experience of personal stress.

9. There have never been any known objective indicia of academic under-achievement, for example in the form of subpar grades, repeated grades, incompletes or withdrawn classes. She was able to obtain college credit for four courses via the College Board's advanced placement testing mechanism. Her profile fit the template of an intelligent, capable and ambitious individual

whose inattention, executive dysfunction and hyperactivity were mild enough that her drive to excel and her reported compensatory maneuvers eventuated in not only adequate, but actually highly superior levels of functioning in real-world settings. Her reported high activity level, vulnerabilities in attention and issues with time management, planning and self-regulation were all reportedly longstanding, consistent with a neurodevelopmental origin and conforming to the very recently established diagnosis of ADHD-Combined Type, for which she had just been receiving medication. There was also a prior diagnosis as well as ongoing treatment for anxiety, dating to 2017, including psychotherapy and medication use, but the clinical details provided were quite limited with no input forthcoming from her long-term psychotherapist. The interplay between her anxiety level and her ADHD manifestations was therefore something that could not be discerned from the limited information provided.

10. Having established sufficient documentation for the diagnosis of adult ADHD, my primary focus turned to evaluating whether the new data provided support for the request for 50% extended time. In doing so, I looked to see whether there was something in the newly supplied information that made the case that time-and-a-half was necessary for this individual to equitably access the MCAT examination. Given the surfeit of narrative examples, subjective descriptions and anecdotes relating to AF's struggle to perform on tests, my emphasis turned to analyzing any existing objective, performance information – that is, solid evidence of diminished skills or functions. While the reported condition, manner and duration of her efforts at achieving her characteristic levels of outstanding academic outcomes was taken into account, I also looked for some tangible factual and/or quantitative information in the historical or clinical data that would speak to the need for extended time. It certainly was not to be found in AF's prior standardized test-taking performance – scores from which clustered in the superior range, with a

few instances of less strong, but still average range results. Nor were there evident signs in her school transcripts that even hinted at any form of academic jeopardy prior to the time she received formal accommodation (in the spring of her sophomore year of college).

11. I then turned my attention to the examination carried out under the auspices of the ADHD Specialists of Columbus in 01-23. In principle, this effort provided a golden opportunity to resolve the impasse between the applicant and her family and providers who were underscoring the severity and extent of AF's disablement versus the prior AAMC reviews that concluded that her functional limitations were not extreme enough to warrant extended time. Unfortunately, that new assessment – in my professional judgment – failed by a wide margin to provide the needed evidence to bolster AF's claim, due in part to a series of flaws that were enumerated in my review.

12. As I noted in my review, the fact that AF was tested when she was off her stimulant medication without any explanation for why or how this was undertaken, introduced a possible source of artifact and rendered the obtained findings less comparable to contexts in which she is fully medicated. I also noted multiple issues with Dr. Benninger's choice of administered measures, as it would have been instructive to generate more actual performance data on the degree to which AF's self-reported visual inattention, executing dysfunction, and memory impairment could be detected/reproduced. It struck me as curious that an experienced specialist in performing evaluations on individuals with ADHD wouldn't have thrown a continuous performance test (CPT) into the battery, given the widespread use and commercial availability of these tools. It is true that there are issues in the use of a CPT as a stand-alone "litmus test" for ADHD, yet generating some actual data on AF's visual RT (reaction time), impulsive tendencies and especially her ability to sustain consistent responding on an inherently uninteresting task - could have provided potentially actionable data vis-a-vis the extended time request.

13. I further observed that Dr. Benninger utilized a measure of oral reading and two tests of auditory attention that have limited applicability to the demands of the MCAT. I also remarked upon the absence of any effort testing, the results of which could have increased the confidence placed in the obtained findings. All cognitive tests are effort-dependent, and taking pains to ensure that any examinee's sample of performance faithfully reflects his/her underlying capacity is a bedrock principle of all psychological assessment. Moreover, the use of effort testing is particularly vital in so-called "secondary gain" scenarios in which an examinee may benefit in some way from being deemed impaired, such as in the present circumstance.

14. So, while undergoing a formal psychometric assessment of any stripe is not absolutely required for conferring a diagnosis of ADHD, such information can prove invaluable especially in borderline or ambiguous cases by providing objective confirmation – or refutation – of subjective claims of symptoms and functional impairment. Additionally, objective measures can assist in the process of ruling in or ruling out comorbid conditions such as learning disorders or mood dysfunction such as one of the anxiety syndromes. And most germane to the present situation, using such tools can quantify the level of impairment in attention, working memory, processing speed, academic fluencies, and the like, to guide recommendations for treatment and remediation and accurately tailor accommodations to an individual's profile of findings. In particular, the performance data generated in such an evaluation can help apportion and fine-tune a clinician's recommendations for extended time.

15. In contrast to the dearth of performance measures, I commented in my review that Dr. Benninger's battery seemed heavily over-weighted on AF's self-report and the reports of her parents on symptom questionnaires (three such instruments – the CAARS, BAARS-IV and the ADDES -- were utilized). I did not understand why Dr. Benninger went through the trouble of re-

probing with redundant sets of items. Dr. Benninger indicated that he was attempting to enhance or ensure the reliability of the results. This takes on new significance when, upon further inspection, his table of results seems to indicate that on the BAARS, AF's parents' endorsement of symptoms of inattention and impulsivity (but not hyperactivity) fell in the "None" range. It would thus be interesting to learn of the sequence in which these instruments were administered to attempt to understand how the parental response fell to the other extreme on the CAARS and ADDES.

16. When formulating my recommendations, I considered outright rejection of AF's request for reconsideration, and believed then as I do now that such a decision would be fully defensible. Yet, guided by the premise that I follow that "the tie goes to the runner," I wound up recommending to AAMC that the applicant be given the benefit of the doubt and awarded 25% extended time. Time-and-a-quarter is a level of accommodation that I have advocated for in professional forums for well over a decade. It is often the most appropriate level of accommodation in mild cases of ADHD and well-compensated cases of dyslexia, in medical conditions that can potentially interfere with concentration, and in relatively minor psychiatric conditions. There have also been empirical demonstrations that the majority of students who are provided higher levels of extended time don't actually utilize it, and that 25% extended time can be effective in normalizing the test taking performance of individuals with ADHD.

17. In final summary, after considering all the documentation including the supplemental documentation that I understand was submitted as part of the latest request for reconsideration, it is my best professional judgment that granting AF 25% extended time (along with the previously approved break time and separate room) is a reasonable course of action and ensures that she will be able to test in an accessible manner.



I declare under penalty of perjury that the foregoing is true and correct, this 9th day of June, 2023.

A handwritten signature in blue ink, reading "MS Greenberg Ph.D.", written over a horizontal line.

Mark S. Greenberg, Ph.D.

# **EXHIBIT A**

**Harvard Medical School Curriculum Vitae**

**Date Prepared:** 01-01-23

**Name:** Mark Steven Greenberg, Ph.D.

**Office Address:** 82 Marlborough St., Boston MA 02116  
Massachusetts General Hospital, 120 2<sup>nd</sup> Ave, Charlestown, MA 02129

**Home Address:** 270 Pleasant Street, # 212, Watertown, MA 02472

**Work Phone:** 617-262-7379

**Work Email:** mark\_greenberg@hms.harvard.edu

**Work FAX:** 617-643-7340

**Place of Birth:** New York, New York

**Education**

09/71-05/76	B.A.	Psychology	State University of New York, Stony Brook
09/76-08/79	M.A.	Clinical Psychology	University of Pennsylvania
08/79-08/81	Ph.D.	Clinical Psychology Ruben C. Gur, PhD	University of Pennsylvania

**Postdoctoral Training**

09/81-09/82	Intern	Clinical Psychology	Boston VA Outpatient Clinic
01/83-12/83	Research Fellow	Clinical Neuropsychology	New England Deaconess Hospital

**Faculty Academic Appointments**

09/77-05/79	Instructor in Psychology	Psychology	University of Pennsylvania
06/79-08/81	Lecturer in Psychology	Psychology	University of Pennsylvania
08/83-06/98	Instructor of Psychology	Psychiatry	Harvard Medical School
09/85-present	Instructor	Psychology	Harvard University Extension School
09-89-08-90	Lecturer in Psychology	Psychology	Harvard University Faculty of Arts and Sciences
03/98-12/05	Senior Lecturer in Criminal Justice	Criminal Justice	Northeastern University School of Criminal Justice
07/98-06/14	Clinical Instructor of Psychology	Psychiatry	Harvard Medical School
01/01-12/05	Visiting Scientist	CRC	Massachusetts Institute of Technology
07/14-present	Instructor in Psychology, in Psychiatry, Part-Time	Psychiatry	Harvard Medical School

**Appointments at Hospitals/Affiliated Institutions**

01/83-12/83	Fellow	Medicine	New England Deaconess Hospital
01/84-08/91	Supervising Psychologist	Psychology	Massachusetts Mental Health Ctr.
07/84-08/91	Scientific Associate	Medicine	New England Deaconess Hospital

03/84-10/84	Consultant	Psychiatry	Jamaica Plain VAMC
02/86- 01/87	Staff Psychologist	Neurology	Brockton-West Roxbury VAMC
12/86-12/90	Consultant	Psychophysiology Laboratory	Manchester VA Medical Center
03/90-11/92	Staff Psychologist	Psychology	Medfield State Hospital
07/90-06/01	Supervisor of Neuropsychology	Psychology	Cambridge Hospital
10/93-10/02	Adjunct Staff	Neuropsychology	Spaulding Rehabilitation Hospital
07/01-12/08	Senior Supervisor of Neuropsychology	Psychology	Massachusetts Mental Health Ctr.
01/09-08/17	Asst. Psychologist	Psychiatry	Massachusetts General Hospital
06/09-12/10	W.O.C. Research Appt.	Psychiatry	Manchester VA Medical Center
01/10-10/16	Adjunct Clinical Staff	Physical Med. & Rehab.	Spaulding Rehabilitation Hospital
09/17-present	Psychologist	Psychiatry	Massachusetts General Hospital

### Major Administrative Leadership Positions

#### Local

01/86-08/90	Director of Psychological Services	New England Deaconess Hospital
09/90-11/92	Director of Neuropsychology and Assessment	Medfield State Hospital

### Professional Societies

1980-2010	American Association for the Advancement of Science	Member
1987-1998	Massachusetts Psychological Association	Member
1989-2001	Massachusetts Neuropsychological Society	Member
		1994 -1995 Board Member
		1996- 1999 Board Member

### Editorial Activities

Ad Hoc Reviewer	JAMA
Ad Hoc Reviewer	Autonomic Neuroscience
Ad Hoc Reviewer	Journal of Alzheimer's Disease

### Other Editorial Roles

1987-1990	Editorial Board Member	Pain Management
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### Honors and Prizes

1976	Phi Beta Kappa	Phi Beta Kappa Society	Undergraduate GPA
1984	Harry C. Solomon Award	Harvard Medical School	Outstanding Research Paper

### Report of Funded and Unfunded Projects

#### Funding Information

#### Past

2009-2014	Twin Study of Biologic Markers for PTSD 2R01MH054636-10A1 Co-Investigator The major goal of this project was to study identical twins discordant for combat in Vietnam to test the familial vs. acquired origin of biologic markers for PTSD.
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2011-2013 Can Post mTBI Neurological Soft Signs Predict Postconcussive and PTSD Symptoms? A Pilot Study  
W81XWH-11-1-0408 Proposal #:10161007  
Co-Investigator  
The major goal of this project was to track the evolution of postconcussive and PTSD symptoms in the aftermath of acute mTBI.

### **Report of Local Teaching and Training**

#### **Teaching of Students in Courses**

1979-1981	Abnormal Psychology Undergraduates	University of Pennsylvania College of General Studies Designed, taught, administered semester long courses
1985-1986	Psychiatry 700A	Harvard Medical School
2003-2004	Medical Students	Lectured on Assessment and Neurobehavioral Syndromes
1995-2000	Biological Basis of Nutrition and Metabolism Medical Students	Harvard Medical School Lectured on the Psychology of Morbid Obesity
1985-2014	Neuropsychology Graduates and Undergraduates	Harvard Extension School Designed, taught, administered semester long course
1988-1995	Stress Management Graduates and Undergraduates	Harvard Extension School Designed, taught, administered semester long course
09/89-01/90	Neuropsychology Undergraduates	Harvard University Designed, taught, administered semester long course
09/98-05/00	Forensic Psychology Graduates and Undergraduates	Northeastern University Designed, taught, administered semester long course
2013-2014	Psychological Assessment Graduates and Undergraduates	Harvard Extension School Designed, taught, administered semester long course

#### **Formal Teaching of Residents, Clinical Fellows and Research Fellows (post-docs)**

1985-1987	Neurology Teaching Rounds	New England Deaconess Hospital
1990	Neurobehavioral Seminar	Beth Israel Hospital
1991-1992		
1997-2000	Neuropsychology Seminar Psychology Interns	Cambridge Hospital Multiple lectures
1994-2006	Neuropsychology Seminar Psychology Interns and Post-Docs	Longwood Area Neuropsychology Program Annual lectures
2014	Professional Affairs Seminar Psychology Interns and Post-Docs	Longwood Area Neuropsychology Program
05/16-	Neuropsychology Teaching Seminar Psychology Interns and Post-Docs	Longwood Area Neuropsychology Program Ongoing participation and annual lectures

#### **Clinical Supervisory and Training Responsibilities**

1984-1986	Senior Supervisor Post-Doctoral Fellows in Psychology	Massachusetts Mental Health Center 3° per week
1986-1989	Senior Supervisor Post-Doctoral Fellows in Neuropsychology	New England Deaconess Hospital 6° per week
1992-1999	Senior Supervisor Post-Doctoral Fellows in Neuropsychology	Cambridge Hospital 3° per week

2001-2008	Senior Supervisor Post-Doctoral Fellows in Neuropsychology	Longwood Area Neuropsychology Fellowship 3° per week
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### **Formal Teaching of Peers (e.g., CME and other continuing education courses)**

1983, 1985	The Neuropsychology of Alzheimer's Disease HMS CME course on Alzheimer's Disease
1984	Behavioral Manifestations of TLE/Presentation HMS CME course on Temporal Lobe Epilepsy
1985	Normal and Abnormal Cognitive Aging/Presentation HMS CME Course on Geriatric Neurology
1987	Screening for Gastric Restrictive Surgery/Presentation HMS CME Course on Surgical Approaches to Obesity
1988-1990	Screening for Gastric Restrictive Surgery/Course Director, Presentation Harvard CME Course on Multidisciplinary Aspects of Obesity
1990	Psychological Assessment of Trauma/Presentation Harvard CME Course on Psychological Trauma
1991	Neurologic Patients/Presentation HMS CME Course on Treating Cognitive Disorders
1992-1997	Adult Attention Deficit Hyperactivity Disorder/Course Director, Presentation Cambridge Hospital/HMS CME Course on ADHD
1997	Workshop HMS CME Course on Contemporary Applications of Psychological Testing
1998	Course Director, Presentation Cambridge Series CME course on the Biological Self
1998-1999	Workshop HMS CME Course on Contemporary Applications of Psychological Testing
1999	Course Director, Presentation HMS CME Course on Psychotherapy
2001	Course Director, Presentation Cambridge Series CME course on Understanding the Brain: Adults
2002	Course Director, Presentation Cambridge Series CME course on Controversies in Development
2008	Presentation MHMC Pre-Conference Institute on Academic Accommodations

### **Local Invited Presentations**

1985	The Neurology of Visual Hallucinations/Presentation McLean Hospital
1985	The Neurology of Hallucinations/Presentation Harvard University Brain and Behavior Seminar
1988	AIDs Dementia/Grand Rounds Spaulding Rehabilitation Hospital
1990	Adult ADHD/Presentation Harvard University Health Services
1990	AIDs Dementia/Presentation Metropolitan State Hospital
1991	Forensic Aspects of PTSD/Presentation Massachusetts Bar Association

1992	Malingering/Presentation Massachusetts Neuropsychological Society Seminar on Malingering
1994	Psychotherapy with Neurologic Patients/Presentation Boston VA Neuropsychology Symposium on Neurological Disorders
1994	Forensic Aspects of TBI/Presentation Massachusetts Neuropsychological Society
1995	Adult ADHD/Presentation Harvard University Disability Coordinators Meeting
1995	Adult ADHD/Presentation Harvard University Bureau of Study Council
1995	Adult Presentations of ADHD/Grand Rounds Spaulding Rehabilitation Hospital
2002-2008	The Psychologist as Consultant/Capstone Seminar Harvard University Department of Psychology
2004-2011	Assessing Disabled Students/Presentation Harvard University Summer Institute on College Admissions
2015	Testing Accessibility & Accommodations Presentation Council on Testing, Licensing & Regulation (CLEAR)

## **Report of Regional, National and International Invited Teaching and Presentations**

### **Invited Presentations and Courses**

**No presentations below were sponsored by outside entities**

#### **Regional**

1998	AIDs Dementia/Presentation The Institute of Living, Hartford, CT
2013	Concussion: Mechanism, Myths, Manifestations and Management/Presentation UConn Post-Secondary Training Institute, Boston, MA
2015	A Neurologically-Informed Approach to Executive Dysfunction/Presentation UConn Post-Secondary Training Institute, Boston, MA
2016	Executive Dysfunction/Presentation Landmark College Summer Institute
2016	Mild Traumatic Brain Injury/Presentation Landmark College Summer Institute

#### **National**

1985	Psychiatric Presentations of Epilepsy/Presentation American Psychiatric Association Annual Meeting, Dallas, TX
1986	AIDS Dementia/Presentation American Psychological Association Annual Meeting, Washington, DC
1987	Temporal Lobe Epilepsy/Presentation Wright State University Medical School, Dayton, OH Adult ADHD/Co-Presentation
1997	AHEAD Annual Conference, Boston, MA
2000	Adult ADHD/Presentation ETS Annual Meeting of the Testing Review Panel, Princeton, NJ
2004	Adult ADHD/Presentation Combined Testing Agencies Disability Forum Conference on Disability Accommodations, Princeton, NJ

2004	Providing Support for Medical Students/Presentation Association of American Medical Colleges Annual Meeting, Boston, MA
2006	Detecting LD among Gifted Students and Documenting Dysgraphia/Presentation ETS Annual Meeting of the Testing Review Panel, Princeton, NJ
2006	Assessment of Anxiety and Related Disorders/Presentation Combined Testing Agencies Disability Forum, Washington, DC
2009	Sleep Dysfunction and Neurocognitive Performance/Presentation ETS Annual Meeting of the Testing Review Panel, Princeton, NJ
2012	Workshop on Executive Dysfunction University of Pennsylvania 5 <sup>th</sup> Annual Symposium on Disabilities, Philadelphia, PA
2012	Executive Dysfunction/Presentation; Pharmacology and Psychometrics/Presentation Combined Testing Agencies Disability Forum, San Francisco, CA/Presentation
2014	Concussion: Mechanism, Myths, Manifestations and Management/Presentation Columbia University Health Services, New York, NY
2015	Workshop on the Woodcock-Johnson-IV Assessment Instruments Columbia University Health Disabilities Services, New York, NY
2022	Presentation on the Neuropsychiatric Sequelae of SARS-CoV-2 Association of American Medical Colleges Annual Meeting, Washington, DC

## **Report of Clinical Activities and Innovations**

### **Current Licensure and Certification**

05/91 Massachusetts Board of Registration of Psychologists:  
Licensed Psychologist Health Service Provider # 3411

### **Practice Activities**

1990-present	Outpatient Clinical and Neuropsychology	Mark S Greenberg, Ph.D. 82 Marlborough St, Boston, MA	25 hrs. per week
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## **Report of Scholarship**

### **Publications**

#### **Peer reviewed publications in print or other media**

1. Sackeim HS, **Greenberg MS**, Weiman AL, Gur RC, Hungerbuhler JP, Geschwind N. Hemispheric asymmetry in the expression of positive and negative emotions: neurologic evidence. Archives of Neurology 1982;39(4):210-218.
2. Van der Kolk B, **Greenberg MS**, Boyd H, Krystal, J. Inescapable shock, neurotransmitters and addiction to trauma. Biological Psychiatry 1985;20(3):314-325.
3. Bear D, Schiff D, Saver J, **Greenberg M**, Freeman R. Quantitative analysis of cerebral asymmetries: Frontal-occipital correlation, sexual dimorphism, association with handedness. Archives of Neurology, 1986;43:598-603.
4. **Greenberg MS**, Farah MJ. The laterality of dreaming. Brain and Cognition 1986; 5:307-321.
5. Gilbert AN, **Greenberg MS**, Beauchamp GK. Sex, handedness and side of nose modulate human odor perception. Neuropsychologia 1989;27(4):505-511.
6. van der Kolk BA, **Greenberg MS**, Orr SP, Pitman RK. Endogenous opioids, stress-induced analgesia and posttraumatic stress disorder. Psychopharmacology Bulletin 1989;25(3):417-421.
7. Pitman RK, van der Kolk BA, Orr SP, **Greenberg MS**. Naloxone-reversible stress-induced analgesia in post-traumatic stress disorder. A pilot study. Archives of General Psychiatry 1990;47:541-544.
8. Ratey JJ, **Greenberg MS**, Bemporad J, Lindem KJ. Unrecognized attention-deficit hyperactivity disorder in adults presenting for outpatient psychotherapy. Journal of Child and Adolescent Psychopharmacology 1992;2(4):267-275.
9. Ratey JJ, **Greenberg MS**, Lindem KJ. Combination of treatments for attention deficit hyperactivity disorder in adults. Journal of Nervous and Mental Disease 1991;179(11):699-701.



10. **Greenberg MS**, Tanev K, Marin M-F, Pitman RK. Stress, PTSD, and dementia. *Alzheimer's and Dementia* 2014;10 S155-S165.
11. **Greenberg, MS**, Wood, NE, Spring, JD, Gurvits TC, Nagurney JT, Zafonte RD, Pitman RK. Pilot study of neurological soft signs and depressive and postconcussive symptoms during recovery from mild traumatic brain injury (mTBI). *Journal of Neuropsychiatry and Clinical Neurosciences* 2015;27(3):199-205.
12. Fricchione, J, **Greenberg, MS**, Spring, J, Wood, N, Mueller-Pfeiffer, C., Milad, MR, Pitman, RK, Orr, SP. Delayed extinction fails to reduce skin conductance reactivity to fear-conditioned stimuli. *Psychophysiology* 2016; 53(9):1343-51.
13. Tanev, KS, Federico, LE, **Greenberg, MS**, Goetter, EM, Orr, SP, Resick, PA, Pitman, RK. Baseline Cognitive Performance and Treatment Outcomes From Cognitive Behavioral Therapies for Posttraumatic Stress Disorder - A Naturalistic Study. *Journal of Neuropsychiatry and Clinical Neurosciences* 17 Jan 2020.
14. Hosterman, J, Balasa, D, Case, H, Gonthiere, I, **Greenberg, M.**, Incrocci, M, Julian, E, Latham, P, Morere, D, Suhr, J. The Perils of the "Approve Everything" Model. *Journal of the National College Testing Association*; 2019;3(2):1-16.

#### Non-peer reviewed scientific or medical publications/materials in print or other media

1. Bear DM, Freeman RF, **Greenberg MS**. Behavioral alterations in patients with temporal lobe epilepsy. In Blumer D, ed. *Psychiatric Aspects of Temporal Lobe Epilepsy*. Washington, D.C.: American Psychiatric Association Press, 1984:197-227.
2. Bear D, Freeman R, Schiff D, **Greenberg MS**. Psychiatric aspects of temporal lobe epilepsy. In Yudofsky S, ed. *Annual Review of Psychiatry*. Washington D.C.: American Psychiatric Association Press, 1984:190-210.
3. Van der Kolk B, Boyd H, Krystal J, **Greenberg MS**. Post-traumatic stress disorder as a biologically based disorder: Implications of the animal model of inescapable shock. In van der Kolk B, ed. *Post-Traumatic Stress Disorder: Psychological and Biological Sequelae*. Washington, D.C.: American Psychiatric Association Press, 1984:123-134.
4. Bear DM, Freeman RF, **Greenberg MS**. Personality changes associated with neurologic disease. In Cavenar J, ed. *Psychiatry*. New York: Lippincott, 1985;28:1-13.
5. **Greenberg, MS**, and Van der Kolk, B. The painting cure. In van der Kolk B, ed. *Psychological Trauma*. Washington, D.C.: American Psychiatric Association Press, 1986:191-215.
6. **Greenberg MS**, Gilbert A. Le système olfactif dans la maladie d'Alzheimer. *Alzheimer's Actualities* 1988;28:6-9.
7. Freeman R, Bear D, **Greenberg MS**. Behavioral disturbances in cerebrovascular disease. In Vincken PJ, Bruyn GW, Klawans H. *Handbook of Clinical Neurology*. Brussels: Elsevier Press 1989:137-150.
8. Pitman RK, Orr SP, van der Kolk BA, **Greenberg MS**, Myerhoff JL, Mougey EH. Analgesia : A new dependent variable for the biological study of posttraumatic stress disorder. In Wolf ME, Mosnaim AD, eds. *Posttraumatic Stress Disorder: Etiology, Phenomenology, and Treatment*. Washington, DC. American Psychiatric Press 1990:140- 147.
9. Gilbert AN, **Greenberg MS**. Stimulus selection in the design and interpretation of olfactory studies. In Chobar KL, Serby M, eds. *The Science of Olfaction*. New York: Springer-Verlag 1992:309-334.
10. **Greenberg MS**. Olfactory hallucinations. In Chobar KL, Serby M, eds. *The Science of Olfaction*. New York: Springer-Verlag 1992:467-499.
11. **Greenberg MS**, Seidman LJ. Temporal lobe epilepsy. In White RF, ed. *Clinical Syndromes in Adult Neuropsychology: A Practitioner's Handbook*. Brussels: Elsevier Press 1993;9:1-34.
12. Tisher PW, Holzer J, **Greenberg MS**, Benjamin S, Devinski O, Bear DM. Psychiatric presentations of epilepsy. *Harvard Review of Psychiatry* 1993;1:210-228.
13. **Greenberg, MS** and Gilbert, AN. The SMELL CHANGE STATUS CHECK (SCSC): A rapid verbal screening tool for assessing recent change in smell function during COVID-19 evaluations. March 27, 2020. Creative Commons.

14. Adans-Dester, C. P., Bamberg, S., Bertacchi, F. P., Caulfield, B., Chappie, K., Demarchi, D., Erb, M. K., Estrada, J., Fabara, E. E., Freni, M., Friedl, K. E., Ghaffari, R., Gill, G., **Greenberg, M. S.**, Hoyt, R. W., Jovanov, E., Kanzler, C. M., Katabi, D., Kernan, M., Kigin, C., ... Bonato, P. Can mHealth Technology Help Mitigate the Effects of the COVID-19 Pandemic? IEEE Open Journal of Engineering in Medicine and Biology, 2020; 1, 243–248.
15. **Greenberg, MS**, Pitman, RK, and Samuelson, KW. Post-traumatic Stress Disorder (PTSD). In: Boyle, GJ, Stern, Y, Stein, DJ and Sahakain, RK (Eds). The SAGE Handbook of Clinical Neuropsychology. (Manuscript in press, 2023).

### Clinical Guidelines and Reports

- Contributor to AHEAD Guidelines for the Documentation of ADHD, 1998.
- Contributor to the ETS Guidelines for the Documentation of ADHD, 1998, 2011.
- Contributor to the ETS Guidelines on the Documentation of Physical Disabilities, 2001.
- Contributor to ETS Guidelines for the Documentation of Psychiatric Disabilities, 2007, 2012.
- Contributor to ETS Guidelines for the Documentation of Intellectual Disabilities, 2013.
- Contributor to ETS Guidelines for the Documentation of Traumatic Brain Injuries, 2014.

### Thesis

Conjugate Lateral Eye Movements and Patterns of Dream Recall. A Dissertation in Psychology. Presented to the Graduate Faculties of the University of Pennsylvania in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy, 1981.

### Narrative Report

My graduate training and orientation emphasized the pursuit of basic research in neuroscience. Following my exposure to the challenges of clinical work as a post-doctoral fellow under the mentorship of David M. Bear, M.D., I re-oriented my career to the practice of clinical neuropsychology, first in hospital settings and eventually in the outpatient milieu. Since 11/90, I have been engaged in private clinical practice. I see adults and adolescents with suspected cognitive and/or emotional sequelae secondary to a wide range of neurological insults: neurodevelopmental disorders, head trauma, stroke, neurotoxic exposure, epilepsy and dementia. My referral base consists of local physicians -- mainly neurologists and psychiatrists -- and mental health clinicians. I administer standardized tests of cognitive and personality function in an attempt to define a given patient's patterns of cognitive strength and weakness and assist in the differential diagnosis of complex clinical cases whose presentations tend to "fall between the cracks" of neurology and psychiatry. I was among the first group of clinicians to document the CNS impact of HIV infection, and an early proponent of the persistence of ADHD symptomatology into adulthood. From 1985 to 2005 I consulted to a team of local bariatric surgeons and performed pre-operative psychological screenings on over 2000 gastric restrictive surgery patients.

Over the last decade-and-a-half, a sizable proportion of my clinical practice has been dedicated to assisting college students and high functioning professionals with underlying residual, often occult, learning and attentional issues. I have been actively involved in the issue of defining adequate documentation for the granting of formal academic accommodations in academic settings and on standardized high-stakes tests.

I maintain my traditional psychology skills by offering psychotherapy -- both long-term and short-term -- to a wide range of individuals: high functioning patients coping with stressors and life transitions, patients with chronic medical conditions and those with longstanding dysfunctional personality traits. I perform a limited number of forensic evaluations for insurance carriers, private attorneys, and governmental agencies. These

cases typically involve offering opinions regarding disputed claims of cognitive impairment and/or emotional damages.

In 2009, I was recruited to the MGH and SRH to participate in basic research on the overlap between PTSD and Postconcussive Syndrome as a member of the PTSD Laboratory headed by Roger K. Pitman, M.D. We received an award from the US Army Telemedicine and Advanced Technology Research Center (TATRC) to study the evolution of postconcussive symptoms following acute mild head injury and collected data on a sample of mild TBI patients recruited from the MGH Emergency Department. The findings of that project have appeared in the Journal of Neuropsychiatry and Clinical Neurosciences.

I am continuing to collaborate with a group of investigators from MGH on the study of potential pharmacological and behavioral techniques for “de-toxifying” the effects of traumatic memories in PTSD, based on the reconsolidation blockade paradigm.

At the very outset of the SARS-CoV-2 outbreak I collaborated with long-term colleague Avery Nelson Gilbert, Ph.D., on a prototype self-report screening measure (the Smell Change Status Check (SCSC)) designed to detect potential virus-induced alterations in olfaction/gustation. Throughout the SARS-CoV-2 outbreak I have continued to engage in in-person outpatient testing and treatment with appropriate screening and environmental precautions observed. I have also helped to design and implement a DoD/DTRA funded, Leidos-sponsored, randomized, placebo-controlled, COVID-19 pharmacological treatment trial using Wombat® - a novel electronic platform developed to manage all study phases -- including protocol development, trial execution, electronic capture of patient reported outcomes (ePROs) and study endpoints, as well as regulatory compliance and oversight.

# **EXHIBIT B**

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**AAMC – MCAT ACCOMMODATION ANALYSIS****Confidential Applicant Data**

Applicant: [REDACTED]  
 Age: 22  
 Dx(s): ADHD – Combined  
 Other Neurodevelopmental Disorder (d/t deficits in executive function and working memory)  
 Anxiety Disorder (not specified)  
 Depressive Disorder (not specified)  
 Type: Re-Reconsideration  
 Request(s): 150% ET  
 Date Received: 04-26-23  
 Date Returned: 05-03-23  
 Time Spent: 5.0

Documents reviewed include all materials posted to AAMC's reviewer's website.

**Overview:** AF is a high functioning 22-year-old MCAT applicant whose first lifetime diagnosis of ADHD-Combined was made just recently after undergoing an evaluation by Dr. Benninger, an evaluator who self-identifies as a specialist in ADHD. AF and others describe the presence of longstanding difficulties with time management, attentional focus, impulsivity, procrastination, absent-mindedness, and inefficient reading with the need to re-read repeatedly to ensure comprehension. She has been prescribed the stimulant agent Concerta and more recently Adzenys XR-ODT (dosage unknown), which she reports taking daily. AF had previously been diagnosed with Generalized Anxiety Disorder in 2017 in her high school years by her pediatrician Dr. Costlow, when signs of mounting difficulties in managing the pressures of her schoolwork emerged. She was prescribed an unknown psychotropic agent at that time and currently takes Zoloft (dosage unknown.) Additional details regarding her current anti-anxiety and anti-ADHD regimens including their efficacy and side effects have not been disclosed by the applicant, her parents, or Ms. Campbell, her current prescribing QP. It is not known if she has previously or currently undergone any form of counseling or psychotherapy. There is no indication that she has ever been hospitalized for psychiatric reasons.

AF first secured formal academic accommodations at Duke University (150%, no penalty break time) on the basis of Dr. Costlow's diagnosis of an anxiety disorder. Her accommodations apparently were initiated one week before the end of classes in the Spring of 2021 semester. AF previously had never been accommodated or formally identified as a student with academic functional limitations or learning differences though she did reportedly receive school-based reading support as well as informal accommodations in her years at her private school. No documentation from that school has been submitted for review. Additionally, AF has never received accommodation on the SAT, ACT or multiple AP examinations. Her initial request to AAMC for 200%ET was rejected and she was offered EB time. She requested reconsideration and was granted access to a separate room, but no ET. She is now requesting re-reconsideration for 150%ET. Additional information has been provided in a letter from her physician father, a letter from her mother, a revised PS, an addendum to the assessment from Dr. Benninger along with supportive letters from Dr. Costlow.

English is AF's primary language and there is no early history of multi-lingual exposure. There is no apparent history of sociocultural deprivation or inadequate access to medical or educational resources. There is a reported family history of ADHD in two siblings.

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**Analysis:** The bulk of the evidence for AF's reading, attentional and test-taking difficulties appear to be subjective and anecdotal in nature. While it is entirely plausible that her reading focus and efficiency have lagged behind her other academic skills presumably due to vulnerabilities in attention along with the interfering effects of performance anxiety, the key issue at present is whether such relative weaknesses cross the threshold of objective impairment. AF's prior ACT Reading subtest scores of 22 (60%ile) and 21 (54%ile) in 02-18 and 04-18 respectively, were at a level of performance in the mid average range compared to the overall test-taking population. Moreover, the English sub-sections of those tests - which also required the examinee to read passages and essays - were among her strongest scores (35/99%ile and 32/93%ile, respectively).

Inspection of the submitted high school and college transcripts reveals her to be a stellar student with A-level grades from 9-12<sup>th</sup> with the lone exception of a single B+ in AP English. Furthermore, AF performed well enough on her AP examinations to obtain college level credit for four courses without benefit of accommodation. At Duke University, she achieved straights A's in the three terms (including summer) prior to the receipt of accommodations.

Taken together, a review of her prior standardized test results and her academic track record academic grades do not paint a picture of marked impairment. Indeed, she has consistently performed in a stellar fashion in spite of her mood, attentional and reading challenges.

In the opinion of the undersigned, the results of the recent objective psychometric assessment -- which was apparently undertaken in support of her first request for reconsideration -- provide weak support for the presence of substantial functional limitation and her request for time-and-a-half. This assessment was carried out in an idiosyncratic manner and its underlying data provide only limited support for the conclusions derived therefrom. I find myriad problematic aspects to Dr. Benninger's assessment, including:

- Uncertainty regarding AF's medication status. She was reportedly not taking her stimulant medication on the day(s) of testing. There was no mention of how this discontinuation was effectuated, and no discussion of this might have impacted the resulting scores. It was also not stated if she was taking her anti-anxiety medication on the day(s) of testing with no discussion of any possible ensuing impact on the results (e.g., sedation, mitigation of performance anxiety).
- No stand-alone validity tests were performed as part of the battery, departing from a widely recommended professional practice.
- Only one IQ subtest was administered (WAIS-IV Vocabulary), and the very high obtained score (ss=16, SS=130) was then utilized as the sole reference point for judging discrepancy and dysfunction. This practice could have had the effect of magnifying any resulting discrepancy.
- No performance tests of executive function, memory, processing speed or motor function were administered, as is typical in a work-up for ADHD. Yet multiple redundant self/other report measure of ADHD symptomatic were administered without any explanation for this practice.
- Limited achievement tests were administered: the GORT-5 oral reading battery -- which has an uncertain correlation to one's ability to read and respond silently to written text; and just one measure of untimed cloze reading, the WJ-IV Achievement Series Passage Comprehension subtest. Score on these, her two weakest measures, fell in the low average range (SS=90). No tests of timed word, sentence or paragraph reading, or math fluency - which are all relevant to the demands of the MCAT -- were given.
- Only limited tests of attention were performed: WAIS-IV digit "recall" (span) and S-B-5 Memory for Sentences. AF's scores were on the border between low average and average (SS=90) on both measures and moreover, these auditory attention tasks have marginal relevance to her ability to attend to unspoken MCAT items. No continuous performance test (CPT) - considered by some as the "gold standard" for documenting impaired attentional performance -- was



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administered.

- There was no history provided or discussion of the developmental gradient of AF's childhood ADHD manifestations – which are crucial for making the retrospective diagnosis of ADHD. No educational history was provided. The phrase “no induced factors” in the report was used without any explanation as to its meaning.
- There was no enumeration of DSM-5 Hyperactive ADHD criteria in order to support the conclusion that AF manifests the “Combined” subtype of this entity.
- There was minimal assessment of AF's current mood (limited to the subscales of the SCL-90-R) despite the presence of an ongoing mood disorder. Moreover, the SCL-90-R results (based on an unstated normative group) were actually negative for anxiety and only marginally elevated for depression.
- The Addendum letter does not include scores for the BRIEF Inconsistency and Negativity, two relevant validity scales.
- Dr. Benninger appears to base his characterization of “moderately severe” or “severe” ADHD on AF's self-report ratings whereas the parent-report ratings generally paint a more benign picture.
- The discussion of the discrepancy between the untimed Passage Comprehension and the timed GORT-5 Comprehension lacks substance as the scores differ by only an approximate one-third of a standard deviation.

The applicant and her parents attempt to account for the absence of a childhood neurodevelopmental diagnosis but it seems fairly implausible that AF could have manifested moderately severe core aspects of combined ADHD in childhood that were ignored by a supportive and informed family that was already familiar with the syndrome (via the diagnosis in other siblings). Dr. Costlow's argument that AF's anxiety - which was only formally diagnosed 2017 - effectively masked the symptoms of ADHD does not speak to the absence of early detection, as ADHD symptoms, especially those involving self-regulation, are typically most flagrant in the early years of development due to the immaturity of the central nervous system. Lastly, the multiple descriptions of AFs' admirable traits of discipline, attentional stamina and perseverance -- noted repeatedly in her PS and in the letters of her parents -- are at odds with the conclusion that she is severely impaired by dysexecutive aspects of ADHD.

**Conclusions:** AF appears to be a high functioning young woman with manifestations of ADHD that were mild enough to 1) evade detection until late adolescence and 2) allow her to compensate effectively in the academic realm. Her educational history offers no hint of underachievement. Her strong drive to excel and her focus on performance have may indeed played a causal role in triggering her elevated levels of anxiety which have been duly diagnosed, treated and apparently well controlled.

Based on the sum total of data provided I would recommend granting this applicant 125%ET on the basis of the combined effects of anxiety and reading inefficiency leading to mild levels of functional impairment. Additionally, stop-the-clock breaks can afford her the opportunity to manage her stress level if she experiences a flare up of anxiety during testing. Access to a separate room will help screen her from ambient distractions and from becoming focused on other test-takers' activities.

In the judgment of the undersigned, the psychometric, educational, and clinical data do not establish a level of functional impairment that would warrant the provision of time-and-a-half.

**Recommendations:** Modify AF's re-reconsideration request and offer 125% ET along with endorsing the two previously granted accommodations, with the goal of helping this applicant better manage her attentional resources and emotions while sitting for the MCAT.

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Respectfully submitted,

A handwritten signature in black ink, appearing to read "MS Greenberg", enclosed within a faint, light-colored rectangular border.

Mark S. Greenberg, Ph.D.  
Consultant to AAMC